AC

Centrifugal Roof and Wall Exhausters

INSTALLATION, OPERATION AND MAINTENANCE

This publication contains the installation, operation and maintenance instructions for standard units of the *AC-Centrifugal Roof and Wall Exhausters*.

- ACE-D / ACE-B
- ACW-D / ACW-B / ACW-HP / ACW-XP
- ACRU-D / ACRU-B / ACRU-HP / ACRU-XP

Carefully read this publication and any supplemental documents prior to any installation or maintenance procedure.

Loren Cook AC catalog provides additional information describing the equipment, fan performance, available accessories, and specification data.

For additional safety information, refer to AMCA publication 410-96, *Safety Practices for Users and Installers of Industrial and Commercial Fans*.

All of the publications listed above can be obtained from Loren Cook Company by phoning (417)869-6474, extension 166; by FAX at (417)832-9431; or by e-mail at info@lorencook.com.

For information and instructions on special equipment, contact Loren Cook Company at 417.869-6474.

⚠WARNING

Rotating Parts & Electrical Shock Hazard:
Disconnect electric power before working on unit.

Follow proper lockout / tagout procedures to ensure the unit cannot be energized while being installed or serviced.

A disconnect switch should be placed near the fan in order that the power can be swiftly cut off, in case of an emergency and in order that maintenance personnel are provided complete control of the power source.

Grounding is required. All field-installed wiring must be completed by qualified personnel. All field-installed wiring must comply with National Electric Code (NFPA 70) and all applicable local codes.

Failure to follow these instructions could result in death or serious injury.

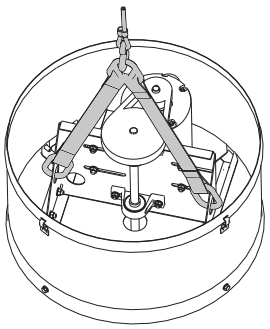
Receiving and Inspection

Immediately upon receipt of an AC fan, carefully inspect the fan and accessories for damage and shortage.

- Turn the wheel by hand to ensure it turns freely and does not bind.
- Check dampers (if included) for free operation of all moving parts.
- Record on the *Delivery Receipt* any visible sign of damage.

Handling

Lift the fan by the shipping carton or lifting lugs provided under top cap. **NOTICE! Never lift by the shaft, motor or housing.**



Lifting Lugs

Storage

If the fan is stored for any length of time prior to installation, store it in its original shipping crate and protect it from dust, debris and the weather.

Installation

If the fan was delivered with the motor unmounted, see the maintenance section for belt and pulley installation.

If the fan was purchased as a wall mount unit and a grease terminator or grease trough was not purchased, a 1-1/16 inch diameter drain hole should be drilled at the bottom side of the fan for drainage.

⚠WARNING

Code requirements and environmental effects

The attachment of roof mounted fans to the roof curb as well as the attachment of roof curbs to the building structure must exceed the structural requirements based on the environmental loading derived from the applicable building code for the site. The local code official may require variations from the recognized code based on local data. The licensed engineer of record will be responsible for prescribing the correct attachment based on construction materials, code requirements and environmental effects specific to the installation.

Failure to follow these instructions could result in death or serious injury.

Wall Exhauster Installation

If your fan is a wall exhauster, a mounting template is shipped with the fan. Use the template to locate the necessary lag screws or anchor bolts on the wall. The fan can then be lifted and attached easily. Secure with lag screws, anchor bolts, or other suitable fasteners.

Damper Installation

If your fan is supplied with dampers, follow the directions below. If your fan does not include dampers, proceed to Belt and Pulley Installation.

1. Place the damper inside the curb or inside the duct work. Ensure the damper will open freely for the correct direction of the airflow.
2. Secure to curb at the damper shelf.
3. Drill hole in the curb shelf for conduit needed for motor wiring.
4. Operate the dampers manually to ensure the blades move freely.
5. Install fan over curb while aligning the conduit location with the conduit hole in the curb.

Wiring Installation

NOTICE! All wiring should be in accordance with local ordinances and the National Electrical Code, NFPA 70. Ensure the power supply (voltage, frequency, and current carrying capacity of wires) is in accordance with the motor nameplate.

(See page 3 for diagram)

Upblast units have two wiring conduits. The vertical conduit comes plugged. The horizontal conduit is directly above the vertical conduit

For Units Without A Junction Box:

An approved metal field wiring compartment must be secured to the unit with two screws in order that the box does not rotate. All wires must be protected from abrasion where they enter and exit the wiring compartment. The green ground wire from the motor must be secured under the green ground screws inside the field wiring compartment using a closed loop connector. Complete connections in accordance with the wiring diagram on the motor.

For Units With A Junction Box:

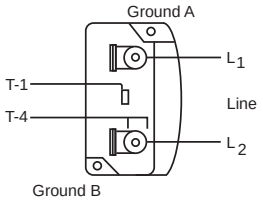
Pull wires through the appropriate conduit. Protect wires from abrasion where they enter the field wiring compartment and complete connections in accordance with the diagram on the motor.

Leave enough slack in the wiring to allow for motor movement when adjusting belt tension. Some fractional motors have to be removed in order to make the connection with the terminal box at the end of the motor.

NOTICE! Follow the wiring diagram in the disconnect switch and the wiring diagram provided with the motor. Correctly label the circuit on the main power box and always identify a closed switch to promote safety (i.e., red tape over a closed switch).

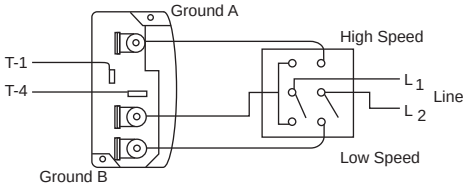
1. Remove the top cap which covers the motor assembly by unlatching the snap clips.
2. For internal wiring, run the electrical wire and conduit through the opening drilled in the damper shelf (refer to *Damper Installation*), then through the wiring conduit in the ventilator base to the motor compartment. For external wiring, run the wires through the horizontal conduit on upblast units, or under top cap in downblast units.
3. Pull the wires through and complete the wiring.

Single Speed, Single Phase Motor



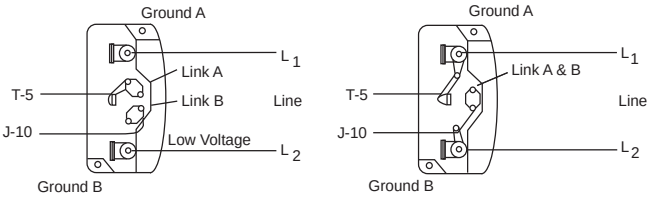
When ground is required, attach to ground A or B with no. 6 thread forming screw. To reverse, interchange T-1 and T-4.

2 Speed, 2 Winding, Single Phase Motor



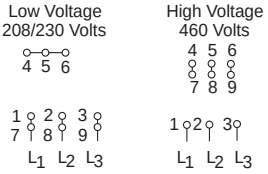
When ground required, attach to ground A or B with No. 6 thread forming screw. To reverse, interchange T-1 and T-4 leads.

Single Speed, Single Phase, Dual Voltage

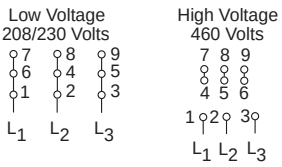


When ground required, attach to ground A or B with No. 6 thread forming screw. To reverse, interchange T-5 and J-10 leads.

3 Phase, 9 Lead Motor Y-Connection

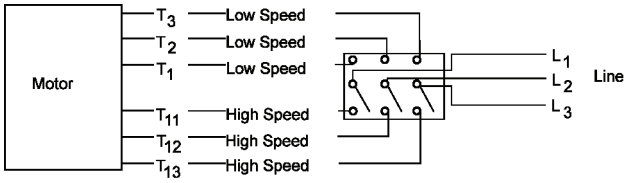


3 Phase, 9 Lead Motor Delta-Connection



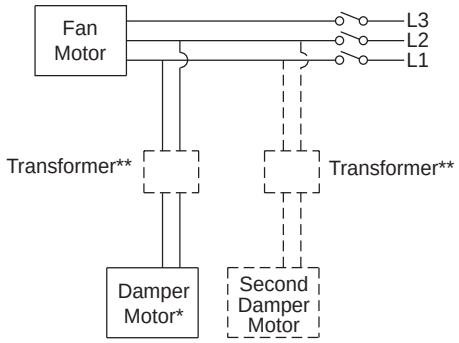
To reverse, interchange any 2 line leads.

2 Speed, 2 Winding, 3 Phase



To reverse: High Speed-interchange leads T_{11} and T_{12}.
Low Speed-interchange leads T_1 and T_2. Both Speeds-interchange any 2 line leads.

Typical Damper Motor Schematic



For 3 phase, damper motor voltage should be the same between L_1 and L_2. For single phase application, disregard L_3. *Damper motors may be available in 115, 230 and 460 volt models. The damper motor nameplate voltage should be verified prior to connection. ** A transformer may be provided in some installations to correct the damper motor voltage to the specified voltage.

Final Installation Steps

1. Ensure fasteners and set screws, particularly fan mounting and bearing fasteners are tightened according to the recommended torque shown on the table below.
2. Inspect for correct amperage with an ammeter and correct voltage with a voltmeter.
3. Ensure that all accessories are installed.
4. Test the fan to be sure the rotation is the same as indicated by the arrow marked 'Rotation'.
   NOTICE! Do not allow the fan to run in the wrong direction. This will overheat the motor and cause serious damage. For 3-phase motors, if the fan is running in the wrong direction, check the control switch. It is possible to interchange two leads at this location so that the fan is operating in the correct direction.
5. Inspect wheel-to-inlet clearance. Wheels may shift in shipment. To realign wheel-to-inlet, shift upper bearing so there is an equal radial clearance between the wheel and inlet. Refer to wheel to inlet clearance on page 6.

Recommended Torque for Setscrews/Bolts (IN/LB)

Setscrews				Hold Down Bolts	
Size	Key Hex Across Flats	Recommended Torque Inch-lbs.			
		Min.	Max.	Size	Wrench Torque (inch-lbs)
No.10	3/32"	28	33	3/8"-16	240
1/4"	1/8"	66	80	1/2"-13	600
5/16"	5/32"	126	156	5/8"-11	1200
3/8"	3/16"	228	275	3/4"-10	2100
7/16"	7/32"	348	384	7/8"-9	2040
1/2"	1/4"	504	600	1"-8	3000
5/8"	5/16"	1104	1200	1-1/8"-7	4200
3/4"	3/8"	1440	1800	1-1/4"-7	6000

Operation

1. Lock out all the primary and secondary power sources.
2. Inspect and tighten fasteners and setscrews, particularly fan mounting and bearing fasteners Refer to *Torque chart*.
3. Inspect belt tension and pulley alignment. Refer to *Belt and Pulley Installation*, page 4.
4. Inspect motor wiring. Refer to *Wiring Installation*.
5. Ensure belt touches only the pulleys.
6. Rotate the wheel to ensure it rotates freely.
7. Ensure fan and ductwork are clean and free of debris.
8. Close and secure all access doors.
9. Restore power to fan.

Start-up

Turn on the fan. In variable speed units, set the fan to its lowest speed. Inspect for the following:

- Direction of rotation
- Excessive vibration
- Unusual noise
- Bearing noise
- Improper belt alignment or tension (listen for squealing)
- Improper motor amperage or voltage

If a problem is discovered, immediately shut the fan off. Lock out all electrical power and check for the cause of the trouble. Refer to *Troubleshooting* on page 6.

Inspection

Inspection of the fan should be conducted at the first 30 minute, 8 hour and 24 hour intervals of satisfactory operation. During the inspections, stop the fan and inspect as instructed.

30 Minute Interval

Inspect bolts, setscrews, and motor mounting bolts. Adjust and tighten as necessary.

8 Hour Interval

Inspect belt alignment and tension. Adjust and tighten as necessary.

24 Hour Interval

Inspect belt tension. Adjust and tighten as necessary.

Maintenance

Establish a schedule for inspecting all parts of the fan. The frequency of inspection depends on the operating conditions and location of the fan.

Inspect fans exhausting corrosive or contaminated air within the first month of operation. Fans exhausting contaminated air should be inspected every three months.

Regular inspections are recommended for fans exhausting non-contaminated air.

Regular inspections of the Grease Terminator 2 are recommended. Depending on the amount of grease discharged through the fan, the Grease Terminator 2 should be changed every 30 to 45 days to ensure proper operation. Any buildup of grease is easily seen during a visual inspection of the clear canister. However, if the Grease Terminator 2 becomes saturated, grease will no longer be absorbed.

It is recommended the following inspections be conducted twice per year.

- Inspect bolts and setscrews for tightness. Tighten as necessary. Refer to *Torque chart*.
- Inspect belt wear and alignment. Replace worn belts with new belts and adjust alignment as needed. Refer to *Belt and Pulley Installation,* page 4.
- Bearings should be inspected as recommended in the *Conditions Chart*.
- Inspect for cleanliness. Clean exterior surfaces only. Removing dust and grease on motor housing assures proper motor cooling.

Fan Bearings

NOTICE! The fan bearings are provided prelubricated. Any specialized lubrication instructions on fan labels supersedes information provided herein. Bearing grease is a petroleum lubricant in a lithium base conforming to a NLGI #2 consistency. If user desires to utilize another type of lubricant, they take responsibility for flushing bearings and lines, and maintaining a lubricant that is compatible with the installation.

A NLGI #2 grease is a light viscosity, low-torque, rust-inhibiting lubricant that is water resistant. Its temperature range is from -30°F to 200°F and capable of intermittent highs of 250°F.

Bearings should be relubricated in accordance with the condition chart below.

Conditions Chart

RPM	Temp °F	Greasing Interval
Up to 1000	-30 to 120	6 months
	120 to 200	2 months
1000 to 3000	-30 to 120	3 months
	120 to 200	1 month
Over 3000	-30 to 120	1 month
	120 to 200	2 weeks
Any Speed	< -30	Consult Factory
Any Speed	> 200	1 week

For moist or otherwise contaminated installations; divide the interval by a factor of 3. For vertical shaft installations divide the interval by a factor of 2.

For best results, lubricate the bearing while the fan is in operation. Pump grease in slowly until a slight bead forms around the bearing seals. Excessive grease can damage seal and reduce life through excess contamination and/or loss of lubricant.

In the event that the bearing cannot be seen, use no more than three injections with a hand operated grease gun.

Motor Bearings

Motors are provided with prelubricated bearings. Any lubrication instructions shown on the motor nameplate supersede instructions below.

Direct Drive 1050/1075,1200,1300 &1500 rpm units use a prelubricated sleeve bearing that has a oil saturated wicking material surrounding it. The initial factory lubrication is adequate for up to 10 years of operation under normal conditions. However, it is advisable to add lubricant after 3 years. Use only LIGHT grade mineral oil or SAE 10W oil up to 30 drops. If the unit has been stored for a year or more it is advisable to lubricate as directed above. For units in severe conditions, lubrication intervals should be reduced to half.

Motors without sleeve bearings (as described above) will have grease lubricated ball or roller bearings. Motor bearings without provisions for relubrication will operate up to 10 years under normal conditions with no maintenance. In severe applications, high temperatures or excessive contaminates, it is advisable to have the maintenance department disassemble and lubricate the bearings after 3 years of operation to prevent interruption of service.

For motors with provisions for relubrication, follow intervals of the table below.

Relubrication Intervals

Service Conditions	NEMA Frame Size					
	Up to and including 184T		213T-365T		404T and larger	
	1800 RPM and less	Over 1800 RPM	1800 RPM and less	Over 1800 RPM	1800 RPM and less	Over 1800 RPM
Standard	3 yrs.	6 months	2 yrs.	6 months	1 yr.	3 months
Severe	1 yr.	3 months	1 yr.	3 months	6 months	1 months

NOTICE! Motors are provided with a polyurea mineral oil NGLI #2 grease. All additions to the motor bearings are to be with a compatible grease such as Exxon Mobil Polyrex EM and Chevron SRI.

The above intervals should be reduced to half for vertical shaft installations.

Motor Services

Should the motor prove defective within a one-year period, contact your local Loren Cook representative or your nearest authorized electric motor service representative.

Changing Shaft Speed

All belt driven ventilators (5HP or less) are equipped with variable pitch pulleys. To change fan speed, perform the following:

1. Loosen setscrew on driver (motor) pulley and remove key, if equipped.
2. Turn the pulley rim to open or close the groove facing. If the pulley has multiple grooves, all must be adjusted to the same width.
3. After adjustment, inspect for proper belt tension.

Maximum RPM with standard or reenforced wheel

Size	ACE-B		ACRU-B & ACW-B		ACRU-HP & ACW-HP		ACRU-XP & ACW-XP
	Standard	Reinforced	Standard	Reinforced	Standard	Reinforced	
60	1981	-					
70	1941	-					
80	1806	-					
100	2013	-	2002	-			
120	1669	-	1671	-			
135	1574	-	1574	-			
150	1519	-	1520	-	1952	-	
165	1296	-	1295	-	1728	-	2508
180	1513	-	1546	-	1829	-	2396
195	1348	-	1353	-	1570	-	2100
210	1190	-	1197	-	1626	-	2126
225	1043	-	1086	-	1435	-	1879
245	885	-	901	-	1185	1234	1616
270	752	-	766	-	1025	1049	1656
300	837	861	837	877	980	1046	1391
330	716	734	716	748	830	912	1182
365	624	648	624	659	735	872	1132
402	539	550	539	560			
445	463	465	463	473			
490	360	396	360	403			
540	347	401		-			

Speed Reduction:

Open the pulley in order that the belt rides deeper in the groove (smaller pitch diameter).

Speed Increase:

Close the pulley in order that the belt rides higher in the groove (larger pitch diameter). Ensure that the RPM limits of the fan and the horsepower limits of the motor are maintained.

Replacing Pulleys and Belts

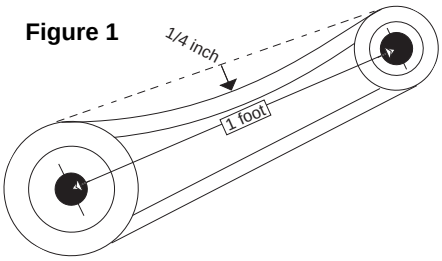
1. Clean the motor and fan shafts.
2. Loosen the motor plate mounting bolts to relieve the belt tension. Remove the belt.
3. Loosen the pulley setscrews and remove the pulleys from the shaft. If excessive force is required to remove the pulleys, a three-jaw puller can be used. This tool, however, can easily warp a pulley. If the puller is used, inspect the trueness of the pulley after it is removed from the shaft. The pulley will need replacement if it is more than 0.020 inch out of true.
4. Clean the bores of the pulleys and place a light coat of oil on the bores.
5. Remove any grease, rust or burrs from pulleys.
6. Place the fan pulley on the fan shaft and the motor pulley on the motor shaft. Damage to the pulleys can occur when excessive force is used in placing the pulleys on their respective shafts.
7. After the pulleys have been correctly placed back onto their shafts, tighten the pulley setscrews.

Belt and Pulley Installation**:**

Belt tension is determined by the sound of the belts when the fan is first started. The belts will produce a loud squeal, which dissipates after the fan is operating at full capacity. If belt tension is too tight or too loose, lost efficiency and damage may occur.

Do not change the pulley pitch diameter to change tension. The change will result in a different fan speed.

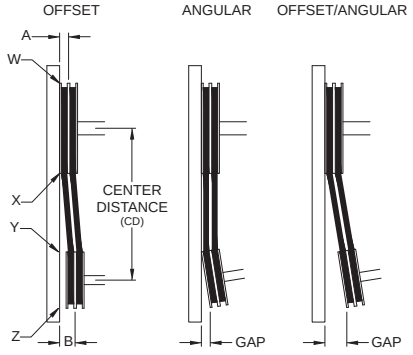
Figure 1



1. Loosen motor plate adjustment bolts and slide motor plate so that belts easily slip into the grooves on the pulleys. Never pry, roll, or force the belts over the rim of the pulley.
2. Slide motor plate until proper tension is reached. For proper tension, a deflection of approximately 1/4” per foot of center distance should be obtained by firmly pressing the belt. Refer to *Figure 1*.
3. Lock the motor plate adjustment bolts in place.
4. Ensure pulleys are properly aligned. Refer to *Figure 2*.

Figure 2
Tolerance

Center Distance	Maximum Gap
Up thru 12”	1/16”
12 through 48”	1/8”
Over 48”	1/4”



Pulley Alignment

Pulley alignment is adjusted by loosening the motor pulley setscrew and by moving the motor pulley on the motor shaft.

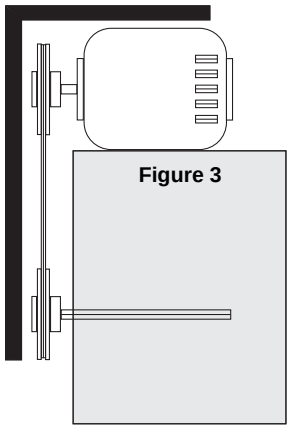


Figure 3

Figure 2 indicates where to measure the allowable gap for the drive alignment tolerance. All contact points (indicated by WXYZ) are to have a gap less than the tolerance shown in the table. When the pulleys are not the same width, the allowable gap must be adjusted by half of the difference in width. *Figure 3* illustrates using a carpenter’s square to adjust the position of the motor pulley until the belt is parallel to the longer leg of the square.

Bearing Replacement

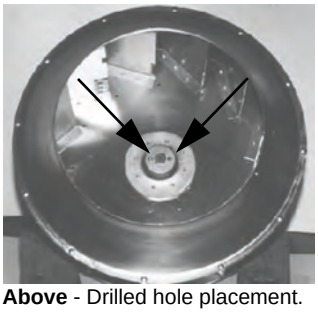
The fan bearings are pillow block type ball bearings.

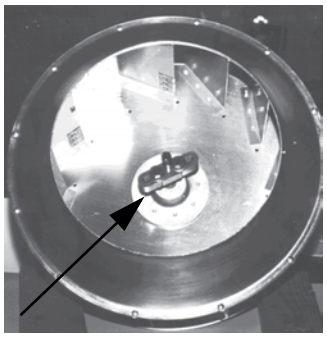
1. Remove the old bearing.
2. Remove any burrs from the shaft by sanding.
3. Slide new bearings onto the shaft to the desired location and loosely mount bearings onto the bearing support. Bearing bolts and setscrews should be loose enough to allow shaft positioning.
4. Correctly position the wheel and tighten the bearing bolts securely to the bearing support.
5. Align setscrews bearing to bearing and secure tightly to the shaft.
   NOTICE! Never tighten both pairs of setscrews before securing bearing mounting bolts. This may damage the shaft.
6. Inspect the wheel position again. If necessary, readjust by loosening the bearing bolts and setscrews and repeat from step 3.

Wheel Replacement

1. Drill two holes approximately centered between the shaft and the edge of the hub OD with the following dimensions:
   • 1/4" diameter
   • 3/8" to 1/2" deep
   • 180° apart in face of hub
2. Tap 1/4" holes to 5/16" thread with the 5/16" hole tap. Do not drill or tap any larger than recommended.
3. Screw the puller arms into the tapped holes full depth of threads (3/8" to 1/2" approximately). Align center of puller with center of shaft. Make certain all setscrews in hub (normally a quantity of two) are fully removed. Work puller slowly to back wheel off the shaft.

Recommended Puller:
Lisle No. 45000 Sterling Wheel Puller. This puller is available at most automotive parts retail outlets.





Above - Drilled hole placement.
Right - Wheel puller.

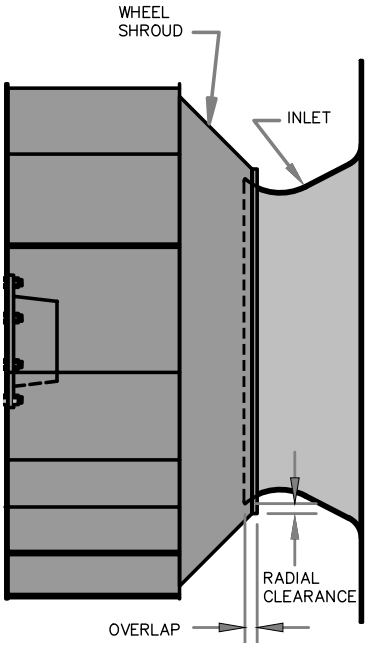
Wheel-to-Inlet Clearance

The correct wheel-to-inlet clearance is critical to proper fan performance. This clearance should be verified before initial start-up since rough handling during shipment could cause a shift in fan components. Refer to wheel/inlet drawing for correct overlap.

Adjust the overlap by loosening the wheel hub and moving the wheel along the shaft to obtain the correct value.

A uniform radial gap (space between the edge of the cone and the edge of the inlet) is obtained by loosening the bearing bolts and set screws which will allow for correct repositioning.

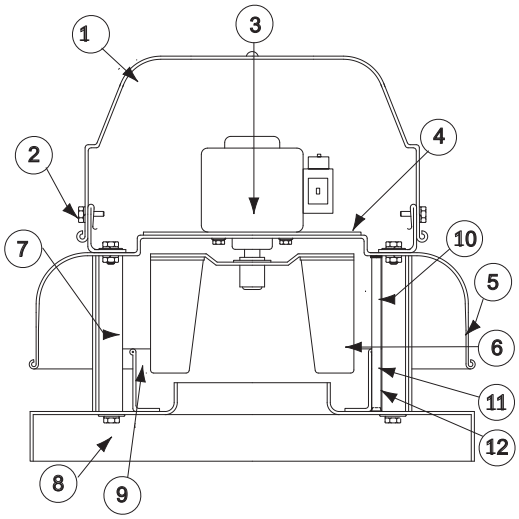
Size	Overlap
60 - 165	3/16”
180 - 245	1/4”
270 - 300	5/16”
330 - 365	3/8”
402	7/16”
445 - 490	1/2”
540	13/16”



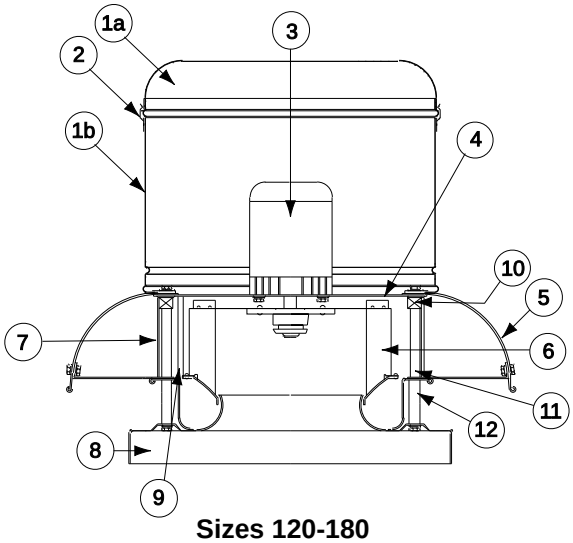
Troubleshooting

Problem and Potential Cause
Low Capacity or Pressure •Incorrect direction of rotation. Make sure the fan rotates in same direction as the arrows on the motor or belt drive assembly. •Poor fan inlet conditions. There should be a straight clear duct at the inlet. •Improper wheel alignment.
Excessive Vibration and Noise •Damaged or unbalanced wheel. •Belts too loose; worn or oily belts. •Speed too high. •Incorrect direction of rotation. Make sure the fan rotates in same direction as the arrows on the motor or belt drive assembly. •Bearings need lubrication or replacement. •Fan surge.
Overheated Motor •Motor improperly wired. •Incorrect direction of rotation. Make sure the fan rotates in same direction as the arrows on the motor or belt drive assembly. •Cooling air diverted or blocked. •Improper inlet clearance. •Incorrect fan RPMs. •Incorrect voltage.
Overheated Bearings •Improper bearing lubrication •Excessive belt tension.

ACE-D Parts List



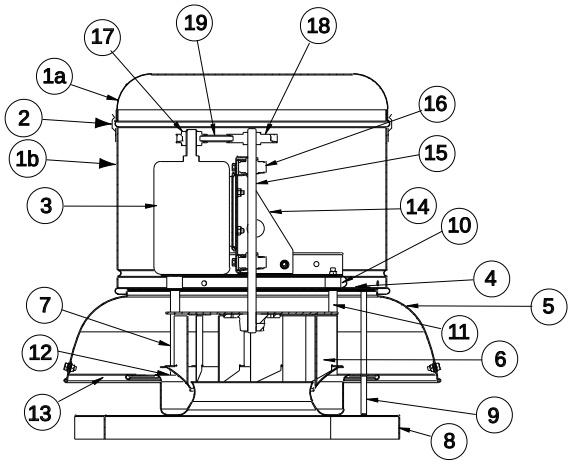
Sizes 70-100



Sizes 120-180

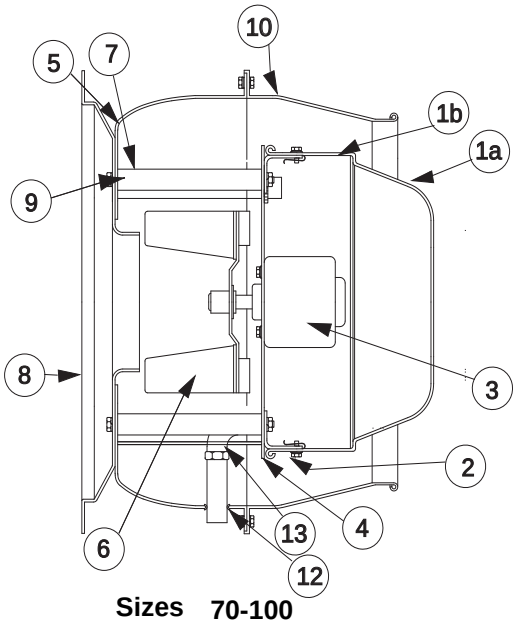
Part No.	ACE-D Parts Description	
	70-100	120-180
1a	Top Cap	Top Cap Lid
1b		Top Cap Cylinder
2	—	Top Cap Clip (4)
3	Motor	Motor
4	Motor Plate	Motor Plate
5	Baffle	Baffle
6	Wheel Assembly	Wheel Assembly
7	Bird Screen	Bird Screen
8	Base	Base
9	Conduit	Conduit
10	Isolator (4)	Isolator (4)
11	Upper Post (4)	Upper Post (4)
12	—	Lower Post (4)

ACE-B Parts List

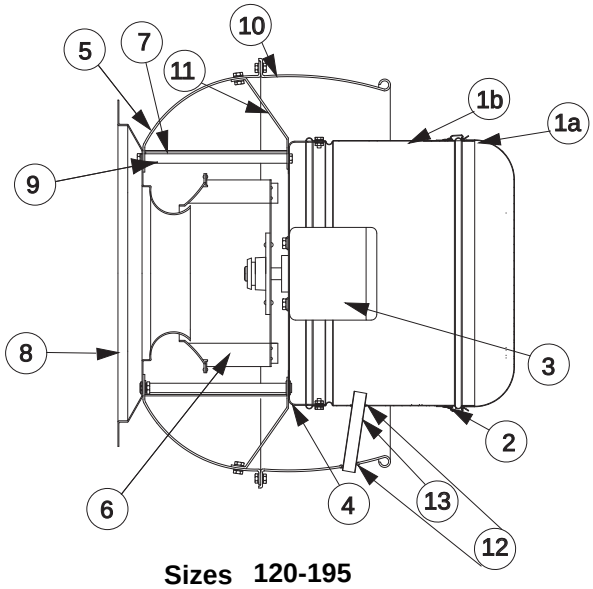


Part No.	ACE-B Parts Description			
	60-100	120-245	270-300	330-540
1a	Top Cap Lid	Top Cap Lid	Top Cap Lid	Top Cap Lid
1b	Top Cap Cylinder	Top Cap Cylinder	Top Cap Cylinder	Top Cap Cylinder
2	Top Cap Clip (4)	Top Cap Clip (4)	Top Cap Clip (8)	Top Cap Clip (8)
3	Motor	Motor	Motor	Motor
4	—	Motor Plate	Motor Plate	Motor Plate
5	Baffle	Baffle	Baffle	Baffle
6	Wheel Assembly	Wheel Assembly	Wheel Assembly	Wheel Assembly
7	Bird Screen	Bird Screen	Bird Screen	Bird Screen
8	Base	Base	Base	Base
9	Conduit	Conduit	Conduit	Conduit
10	Isolator (3)	Isolator (4)	Isolator (4)	Isolator (4)
11	Upper Post (4)	Upper Post (4)	Upper Post (8)	Upper Post (8)
12	Lower Post (4)	Lower Post(4)	Lower Post (8)	Lower Post (8)
13	—	—	—	Brace (8)
14	Power Assembly	Power Assembly	Power Assembly	Power Assembly
15	Shaft	Shaft	Shaft	Shaft
16	Bearing (2)	Bearing (2)	Bearing (2)	Bearing (2)
17	Drive Sheave	Drive Sheave	Drive Sheave	Drive Sheave
18	Driven Sheave	Driven Sheave	Driven Sheave	Driven Sheave
19	Belt Set	Belt Set	Belt Set	Belt Set

ACW-D Parts List



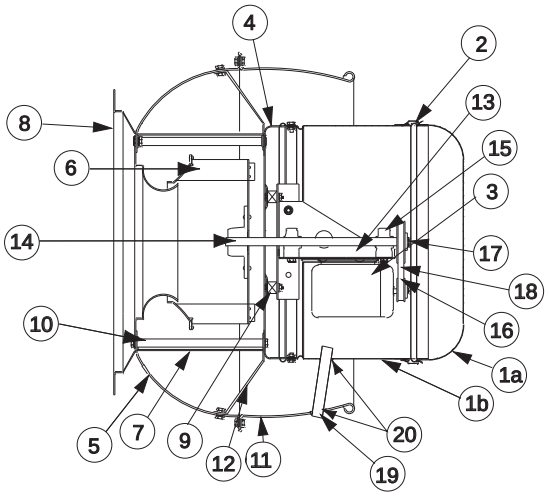
Sizes 70-100



Sizes 120-195

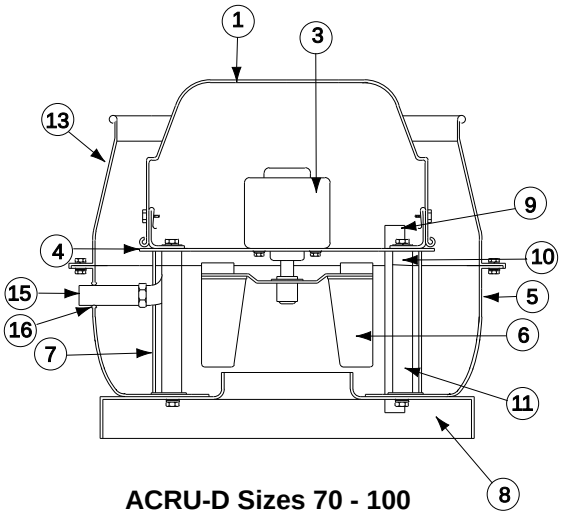
Part No.	ACW-D Parts Description	
	70-100	120-195
1a	Top Cap	Top Cap Lid
1b		Top Cap Cylinder
2	—	Top Cap Clip (4)
3	Motor	Motor
4	Motor Plate	Spun Motor Plate
5	Baffle	Baffle
6	Wheel Assembly	Wheel Assembly
7	Bird Screen	Bird Screen
8	Wall Flange	Wall Flange
9	Post (4)	Post (4)
10	Wind Band	Wind Band
11	—	Brace (4)
12	Grommet (2)	Grommet (2)
13	Vent Tube (angled)	Vent Tube

ACW-B Parts List

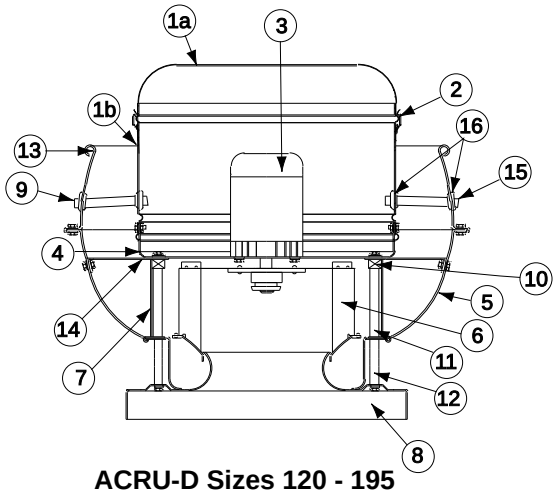


Part No.	ACW-B Parts Description		
	100	120-165	180-245
1a	Top Cap Lid	Top Cap Lid	Top Cap Clip
1b	Top Cap Cylinder	Top Cap Cylinder	Top Cap Cylinder
2	Top Cap Clip (4)	Top Cap Clip (4)	Top Cap Clip (4)
3	Motor	Motor	Motor
4	Spun Motor Plate	Spun Motor Plate	Spun Motor Plate
5	Baffle	Baffle	Baffle
6	Wheel Assembly	Wheel Assembly	Wheel Assembly
7	Bird Screen	Bird Screen	Bird Screen
8	Wall Flange	Wall Flange	Wall Flange
9	Isolator (3)	Isolator (4)	Isolator (4)
10	Post (4)	Post (4)	Post (8)
11	Wind Band	Wind Band	Wind Band
12	—	Brace (4)	Brace (8)
13	Power Assembly	Power Assembly	Power Assembly
14	Shaft	Shaft	Shaft
15	Bearing (2)	Bearing (2)	Bearing (2)
16	Drive Sheave	Drive Sheave	Drive Sheave
17	Driven Sheave	Driven Sheave	Driven Sheave
18	Belt Set	Belt Set	Belt Set
19	Vent Tube	Vent Tube	Vent Tube
20	Grommet (2)	Grommet (2)	Grommet (2)

ACRU-D Parts List



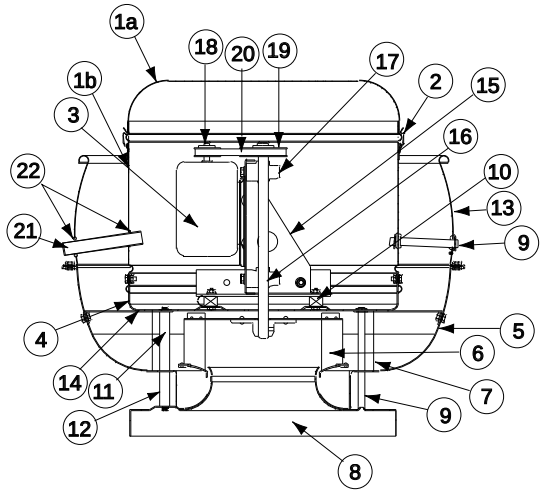
ACRU-D Sizes 70 - 100



ACRU-D Sizes 120 - 195

Part No.	ACRU-D Parts Description	
	70-100	120-195
1a	Top Cap	Top Cap Lid
1b		Top Cap Cylinder
2	—	Top Cap Clip (4)
3	Motor	Motor
4	Motor Plate	Spun Motor Plate
5	Baffle	Baffle
6	Wheel Assembly	Wheel Assembly
7	Bird Screen	Bird Screen
8	Base	Base
9	Conduit	Conduit
10	Isolator (4)	Isolator (4)
11	Upper Post (4)	Upper Post (4)
12	—	Lower Post (4)
13	Wind Band	Wind Band
14	—	Brace (4)
15	Vent Tube	Vent Tube
16	Grommet (2)	Grommet (2)

ACRU-B Parts List



Part No.	ACRU-B Parts Description		
	100	120-245	270-490
1a	Top Cap Lid	Top Cap Lid	Top Cap Lid
1b	Top Cap Cylinder	Top Cap Cylinder	Top Cap Cylinder
2	Top Cap Clip (4)	Top Cap Clip (4)	Top Cap Clip (8)
3	Motor	Motor	Motor
4	Spun Motor Plate	Spun Motor Plate	Spun Motor Plate
5	Baffle	Baffle	Baffle
6	Wheel Assembly	Wheel Assembly	Wheel Assembly
7	Bird Screen	Bird Screen	Bird Screen
8	Base	Base	Base
9	Conduit	Conduit	Conduit
10	Isolator (3)	Isolator (4)	Isolator (4)
11	Upper Post (4)	Upper Post (4)	Upper Post (8)
12	Lower Post (4)	Lower Post (4)	Lower Post (8)
13	Wind Band	Wind Band	Wind Band
14	—	Brace (4)	Brace (8)
15	Power Assembly	Power Assembly	Power Assembly
16	Shaft	Shaft	Shaft
17	Bearing (2)	Bearing (2)	Bearing (2)
18	Drive Sheave	Drive Sheave	Drive Sheave
19	Driven Sheave	Driven Sheave	Driven Sheave
20	Belt Set	Belt Set	Belt Set
21	Vent Tube	Vent Tube	Vent Tube
22	Grommet (2)	Grommet (2)	Grommet (2)

Limited Warranty

Loren Cook Company warrants that your Loren Cook fan was manufactured free of defects in materials and workmanship, to the extent stated herein. For a period of one (1) year after date of shipment, we will replace any parts found to be defective without charge, except for shipping costs which will be paid by you.

This warranty is granted only to the original purchaser placing the fan in service.

This warranty is void if the fan or any part thereof has been altered or modified from its original design or has been abused, misused, damaged or is in worn condition or if the fan has been used other than for the uses described in the company manual. This warranty does not cover defects resulting from normal wear and tear.

To make a warranty claim, notify Loren Cook Company, General Offices, 2015 East Dale Street, Springfield, Missouri 65803-4637, explaining in writing, in detail, your complaint and referring to the specific model and serial numbers of your fan. Upon receipt by Loren Cook Company of your written complaint, you will be notified, within thirty (30) days of our receipt of your complaint, in writing, as to the manner in which your claim will be handled. If you are entitled to warranty relief, a warranty adjustment will be completed within sixty (60) business days of the receipt of your written complaint by Loren Cook Company.

This warranty gives only the original purchaser placing the fan in service specifically the right. You may have other legal rights which vary from state to state.

For fans provided with motors, the motor manufacturer warrants motors for a designated period stated in the manufacturer's warranty. Warranty periods vary from manufacturer to manufacturer. Should motors furnished by Loren Cook Company prove defective during the designated period, they should be returned to the nearest authorized motor service station. Loren Cook Company will not be responsible for any removal or installation costs.